

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 27 July 2000 (27.07.00)	
International application No. PCT/GB99/03782	Applicant's or agent's file reference P/61682/MRCY
International filing date (day/month/year) 12 November 1999 (12.11.99)	Priority date (day/month/year) 12 November 1998 (12.11.98)
Applicant KUMAR, Balbir	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
09 May 2000 (09.05.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer</p> <p>Zakaria EL KHODARY</p> <p>Telephone No.: (41-22) 338.83.38</p>
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PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

To:

EASTMOND, John
Bae Systems
Group IP Department
Lancaster House, P.O. Box 87
Farnborough Aerospace Centre
Farnborough, Hampshire, GU14 6YU
ROYAUME-UNI

Date of mailing (day/month/year)

19 January 2001 (19.01.01)

Applicant's or agent's file reference

P/61682/MRCY

IMPORTANT NOTIFICATION

International application No.

PCT/GB99/03782

International filing date (day/month/year)

12 November 1999 (12.11.99)

1. The following indications appeared on record concerning:

☐ the applicant ☐ the inventor ☒ the agent ☐ the common representative

Name and Address

HOSTE, Colin, Francis
GEC Patent Dept.
Waterhouse Lane
Chelmsford
Essex, CM1 2QX
United Kingdom

State of Nationality

State of Residence

Telephone No.

01245 275460

Facsimile No.

01245 275114

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person ☐ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address

EASTMOND, John
Bae Systems
Group IP Department
Lancaster House, P.O. Box 87
Farnborough Aerospace Centre
Farnborough, Hampshire, GU14 6YU
United Kingdom

State of Nationality

State of Residence

Telephone No.

01252 373232

Facsimile No.

01252 383000

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the designated Offices concerned
☐ the International Searching Authority ☒ the elected Offices concerned
☒ the International Preliminary Examining Authority ☐ other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Maria Victoria CORTIELLO

Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

EASTMOND, John
Bae Systems
Group IP Department
Lancaster House, P.O. Box 87
Farnborough Aerospace Centre
Farnborough, Hampshire, GU14 6YU
ROYAUME-UNI

Date of mailing (day/month/year) 19 January 2001 (19.01.01)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference P/61682/MRCY	
International application No. PCT/GB99/03782	International filing date (day/month/year) 12 November 1999 (12.11.99)

1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

Name and Address MARCONI ELECTRONIC SYSTEMS LIMITED The Grove Warren Lane Stanmore Middlesex HA7 4LY United Kingdom	State of Nationality GB	State of Residence GB
	Telephone No. 0181 954 2311	
	Facsimile No. 0181 954 7808	
	Teleprinter No.	

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☒ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address BAE SYSTEMS ELECTRONICS LIMITED The Grove Warren Lane Stanmore Middlesex HA7 4LY United Kingdom	State of Nationality GB	State of Residence GB
	Telephone No. 0181 954 2311	
	Facsimile No. 0181 954 7808	
	Teleprinter No.	

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the designated Offices concerned
☐ the International Searching Authority ☒ the elected Offices concerned
☒ the International Preliminary Examining Authority ☐ other:

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer Maria Victoria CORTIELLO</p> <p>Telephone No.: (41-22) 338.83.38</p>
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PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P/61682/MRCB	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 99/ 03782	International filing date (day/month/year) 12/11/1999	(Earliest) Priority Date (day/month/year) 12/11/1998
Applicant MARCONI ELECTRONIC SYSTEMS LIMITED et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☒ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

4

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

National Application No

PCT/GB 99/03782

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01Q3/44 H01Q19/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 740 791 A (DARBOWITCH SERGE ET AL) 26 April 1988 (1988-04-26) column 2, line 14-60; figures 1,2	1,2, 8-11, 17-28
Y	---	3-7,13
X	US 4 338 607 A (DRABOWITCH SERGE) 6 July 1982 (1982-07-06) column 5, line 52-60 column 6, line 3; figure 6	1,8,11, 17,20,25
Y	---	
Y	GB 2 253 947 A (MARCONI GEC LTD) 23 September 1992 (1992-09-23) cited in the application page 2-5; figure 1	3-7
A	---	1,2,8, 11,20, 21,23

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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

17 February 2000

Date of mailing of the international search report

29/02/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Ribbe, J

INTERNATIONAL SEARCH REPORT

national Application No

PCT/GB 99/03782

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2 973 516 A (MEDVED DAVID B.) 28 February 1961 (1961-02-28) column 2, line 59 -column 3, line 8 column 3, line 24-35 column 6, line 41-66; figures 1,2	13
A	---	1-8, 11, 20
A	WO 97 29525 A (SECR DEFENCE ;ROBERTSON DUNCAN ALEXANDER (GB); MAY PETER BRIAN (GB) 14 August 1997 (1997-08-14) page 3 -page 4 page 9, line 1,2; figure 2 ---	1,2, 17-21,23
A	US 5 486 838 A (DIENES GEZA) 23 January 1996 (1996-01-23) page 1, line 47-50 column 2, line 37-49; figure 1 ---	1,2, 17-22
A	EP 0 612 120 A (MURATA MANUFACTURING CO) 24 August 1994 (1994-08-24) column 5, line 1-8,24-28,40-47; figure 6 -----	13-16

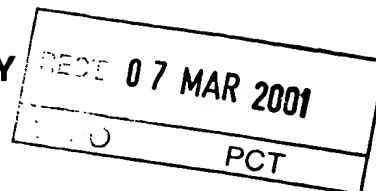
INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 99/03782

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4740791	A	26-04-1988	FR 2548836 A EP 0131512 A	11-01-1985 16-01-1985
US 4338607	A	06-07-1982	FR 2445040 A EP 0013221 A	18-07-1980 09-07-1980
GB 2253947	A	23-09-1992	EP 0505040 A	23-09-1992
US 2973516	A	28-02-1961	NONE	
WO 9729525	A	14-08-1997	AU 1610597 A EP 0879488 A GB 2324659 A, B	28-08-1997 25-11-1998 28-10-1998
US 5486838	A	23-01-1996	AU 688844 B AU 1508795 A EP 0678930 A CA 2125602 A	19-03-1998 26-10-1995 25-10-1995 24-02-1995
EP 0612120	A	24-08-1994	JP 6244630 A DE 69418076 D DE 69418076 T US 5550553 A	02-09-1994 02-06-1999 25-11-1999 27-08-1996



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P/61682/MRCB	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB99/03782	International filing date (day/month/year) 12/11/1999	Priority date (day/month/year) 12/11/1998
International Patent Classification (IPC) or national classification and IPC H01Q3/44		
Applicant BAE SYSTEMS ELECTRONICS LIMITED et al.		



1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 09/05/2000	Date of completion of this report 02.03.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Marot-Lassauzaie, J Telephone No. +49 89 2399 2671 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/03782

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).):*

Description, pages:

1,2,6-20	as originally filed		
3-5	as received on	16/12/1999	with letter of 15/12/1999

Claims, No.:

22-28	as originally filed		
1-21	as received on	16/12/1999	with letter of 15/12/1999

Drawings, sheets:

1/10-10/10	as originally filed
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2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/03782

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	4-6, 8-15, 17-21
	No:	Claims	1-3, 7, 16
Inventive step (IS)	Yes:	Claims	4-6, 8
	No:	Claims	1-3, 7, 9-20
Industrial applicability (IA)	Yes:	Claims	1-21
	No:	Claims	

2. Citations and explanations
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Section VIII

Claim 1 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claim attempts to define the subject-matter in terms of the result to be achieved: "the steering means causes the radiation to emerge [...] offset" which merely amounts to a statement of the underlying problem. The technical features necessary for achieving this result should be added, i.e. the way the magnetic deflector is constructed should be specified.

The same objection applies to claims 4-6, which specify that the magnetic field should have a gradient, without making clear how this gradient is created.

At present, claim 1 can be read over any system with a dielectric deflector, which explains the objections raised under Section V below.

Section V

1. Reference is made to the following documents:

D1: US-A-4 740 791

D2: GB-A-2 253 947

D3: US-A-2 973 516

D4: WO-A-97/29525

2. The subject of the application is a steerable antenna using a reflector and a device to steer the incident radiation. This device is a magnetic deflector (array antenna, although originally considered, are not claimed any more).

A magnetic deflector (15) is known from D3 (see abstract). Although the applicants tried to differentiate their device from this prior art by specifying that the deflected energy is offset from the central axis, it appears that this is also the case in D3: if the wave is deflected, its axis will necessarily be off-center (see also claim 7 of the present application). Therefore, claims 1-3, 7 and 16 lack novelty. The transmission means are the magnetic material (21, 23) and the steering means

are the coils (16, 17).

The device of D3 is especially designed to steer a microwave beam, thus claims 17-20 lack inventive step. The device of D3 uses a polarizer (33) in the same manner than claim 9. Claims 10-12 are normal design practice when polarized waves are used.

In the particular case of claims 13 to 15, a combination of D3 and D4 should be used: D4, although not a scanning device, discloses the simple geometry in which a cone faces the aperture and it is believed that one would recognise from D3 that the device of D4 could be used as a scanning device by using a magnetic deflector in front of the horn 3.

3. However, the combination of the features of dependent claims 4-6 is neither known from, nor rendered obvious by, the available prior art, which does not specify that the magnetic field varies gradually across the aperture. As was discussed under Section VIII, however, these claims are drafted in functional terms and should be redrafted to include the technical features allowing to create such a field gradient. It is suggested therefore that a new independent claim be drafted to include the corresponding technical features, bearing in mind that the features known in combination in D3 should be placed in the preamble of such a claim in accordance with Rule 6.3(b) PCT.